

CHAPTER 8 PRECAST CONCRETE

SIFC-801 GENERAL

SIFC-801.1 Scope. The requirements of this chapter, IBC-1704.4, and IBC-Table 1704.4 Item 9 shall apply when construction includes precast concrete building elements as listed in SIFC-302.4.

SIFC-801.2 Precast concrete fabrication. Fabricators for off-site precast concrete elements shall be subject to special inspections as required by SIFC-302.1 and SIFC-803 and IBC-1704.2. Site-cast precast concrete elements shall be subject to special inspections during fabrication as required by SIFC-2000 Chapter 7 and SIFC-804.1, and IBC-1704.4.

SIFC-801.3 Precast concrete erection. Precast concrete elements shall be subject to special inspections during erection as required by SIFC-804.2 and IBC-Table 1704.4 Item 9.

SIFC-802 FABRICATION AND ERECTION DOCUMENTS

SIFC-802.1 Review and approval. The concrete mix designs shall be submitted to the **RDP** responsible for preparation of precast concrete designs and the **AR**, **SER** and **FCCSS** for review and approval. The fabrication and erection documents shall be submitted to the **AR**, **SER** and **FCCSS** for review and approval prior to precast concrete elements' fabrication and/or erection, as appropriate. The **GC** shall submit two sets of **AR/SER**-approved fabrication and erection documents, including the concrete mix designs, to **FCCSS** for approval. After County review and approval, **FCCSS** will return one set of County-approved fabrication and erection documents for use on the job site. County-approved documents shall be used by the **SIER** to conduct special inspections during construction.

SIFC-802.2 Preparation of fabrication and erection documents. A **RDP** with experience in the design of precast concrete structures shall prepare, sign and seal fabrication and erection documents for precast concrete building elements, including but not limited to: design drawings and calculations, connection details, design of lifting inserts, rigging requirements, and erection bracing. Documents for site-cast precast concrete shall also include, but are not limited to: element fabrication, form removal, storage and transportation.

SIFC-802.3 AR and SER review and approval. The **AR** and the **SER** shall review the fabrication and erection documents and the concrete mix designs for compliance with the architectural and structural design of the building and the County-approved construction documents.

SIFC-803 INSPECTION OF PRECAST CONCRETE FABRICATORS

Where fabrication of precast concrete elements is being performed off-site on the premises of a fabricator's shop, special inspection of the fabricator is required (see SIFC-302.1 and IBC-1704.2). The **SIER** shall verify that the precast plant has a documented and implemented Quality Control Program and shall notify **FCCSS** in writing of his/her findings. The minimum

quality control program shall be in accordance with the Precast/Prestressed Concrete Institute (PCI) Plant Certification Program. Alternatively, the **SIER** may inspect the precast plant at appropriate intervals to verify that materials, methods, products, and quality control comply with project specifications, County-approved fabrication and erection documents and PCI MNL-116, "Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products," and/or PCI MNL-117, "Manual for Quality Control for Plants and Production of Architectural Precast Products."

SIFC-804 INSPECTION OF PRECAST CONCRETE ELEMENTS

The **SIER** shall perform special inspections of precast concrete building elements as required by the VUSBC, IBC-1704.4, and IBC-Table 1704.4 Item 9 during erection for conformance with County-approved documents.

SIFC-804.1 Site-cast precast concrete. During fabrication of site-cast precast concrete elements, the **SIER** shall verify the following:

- **Concrete.** Concrete complies with the County-approved concrete mix designs and the applicable provisions of SIFC-2000 Chapter 7 for cast-in-place concrete.
- **Compressive strength of field-cured cylinders.** The compressive strength of field-cured cylinders satisfies minimum strength requirements of the County-approved construction documents and the lifting requirements and lifting insert specifications of the County-approved fabrication and erection documents.
- **Reinforcing steel.** Reinforcing steel, including lifting inserts, is installed in accordance with County-approved documents.

SIFC-804.2 Erection: During erection of precast concrete elements, the **SIER** shall verify the following:

- **Assembly.** Precast concrete elements are lifted, assembled and braced in accordance with County-approved fabrication and erection documents.
- **Welders.** Welders and weld inspectors are certified in accordance with AWS D1.1, Chapter 5, Part C.
- **Connections.** All welded connections in the structural frame are in accordance with County-approved documents and applicable sections of the AWS D1.1 Welding Code, SJI Specifications, AISC, IBC, and VUSBC. All connections of architectural precast concrete elements in buildings exceeding 30 feet in height and assigned to Seismic Design Category D, E or F in accordance with IBC-1707.6.

SIFC-805 COMPLETION OF PRECAST CONCRETE CONSTRUCTION

Upon completion of architectural and structural precast concrete construction, the **SIER** shall, after review and approval by the **AR** and **SER**, submit a completion letter to **FCCSS** and shall indicate the date of completion on the final report of special inspections.